

AVIATION WEEK

INCORPORATING AVIATION AND AVIATION NEWS

SEPT. 29, 1947

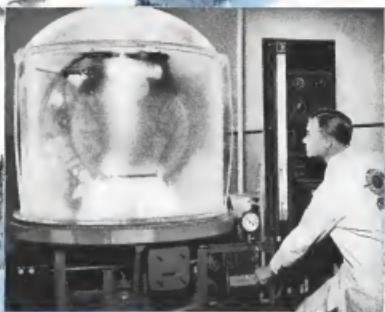
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The low tension ignition system—now used in the Wright Cyclone 18BD—provides a more reliable ignition for "all-weather" flying and at all altitudes—from sea level to well beyond modern airplane operating altitudes.

The system—engineered in collaboration with the Scintilla Magneto Division of the Bendix Aviation Corporation—confines high voltage circuits to very short leads between the transformer coils and the spark plugs. This means...better engine performance...less spark plug trouble...less radio interference...easier maintenance...greater fuel economy in the cruising range with automatic spark advance.



In this giant bell jar, Wright engineers study ignition performance under all conditions of temperature, humidity, and pressure up to 60,000 feet. Test being conducted simulates high altitude, low temperature operation.

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This new aircraft wire, which is floated in oil, is called "Neolay".

Breiley Aircraft Wire is smaller in diameter, lighter in weight than typical aircraft wire. The smooth finish and small diameter help save weight.

The new Neolay wire resists corrosion, circuit integrity under extreme conditions of aircraft operation.

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Neolay

AIRCRAFT WIRE



Quick knockout blow for cabin fires!

Here's a Kidde-designed anti-flame extinguisher that weighs only 7 pounds. Neat and compact, it promises light enough, and simple enough, for a stewardess to use with no trouble. Yet it holds a spray of a half of a gallon of water solution. This has a knock-down strength that quickly puts out fires in cloth curtains, blankets, paper and wooden materials in airplane interiors. (Its freezing point is below -89°F.)

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AVIATION WEEK, September 29, 1947

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THE AVIATION WEEK

JUDGING COMMISSION—Dowag the public in giving it is holding to form judgments on the state of aviation, the President's Air Policy Commission also being judged by aviation.

After two weeks, most aviation observers like what they see. Commission questions are intelligent sometimes pointed. There are indications of prompt action on emergency situations (Chairman Finletter implied a willingness to negotiate with CAB to postpone the 12-cent-a-mile freight boost by certificate airlines).

One staff work seems to be at the bottom of the high opinion in which the commission is held. Whitten's testimony must be in commission hands about one week before it is to be delivered. That gives the commission's staff of experts time to digest it, prepare questions to highlight important points or to close up ambiguous passages. This procedure also saves time, keeps the hearings moving along.

The procedure also makes some witnesses' appearances not too happy. Obviously sharp refresher and consideration has gone into preparation of questions.

OUTLINES APPEAR—Because of the penetrating nature, or the repetition of some of the questions, broad softens of the commission's thinking are beginning to emerge. Best opinion is that the lifetime fear of the men have spent in the business world (exception Vice Chairman George Baker) is at least partly mollified their views on air policy.

Play by the certificate air transport industry for more and more government financial assistance for those new in the business have seemed to entice the commission.

Commission does not seem impressed with argument that the air transport field should now be closed completely.

It appears concerned that full exploitation of the air freight field be made.

It is deeply interested in whether the Civil Aeronautics Act of 1938 should be revised.

It is sympathetic with the financing problems of food base operation and aware of the importance of the GI training program to operators.

SOFT-PEDALING SUBSIDIES—Those who have watched for two weeks the performance at the table in the Department of Commerce audience have not been overly satisfied with the appearance of the rep resentatives of the certificate airlines.

There is a distinct feeling that they have been too much emphasis on government financial aid.

That may move to modify statements of future subsidies. This week the aircraft manufacturers will tell how before the commission. On the basis of these past

statements, the manufacturers' approach will be considerably different than that of the air transport industry.

The aircraft industry's position has always been it does not ask, need or want subsidies. It believes the national security demands a military aircraft procurement rate that is itself would be high enough to enable the manufacturers to stay in business.

This argument is largely thrown out as it can not permit a clash between public and private system. To the manufacturers it is only a fortunate coincidence that a procurement rate high enough to benefit the country also would benefit the manufacturers.

FREE ENTERPRISE—The manufacturers have another long-time policy—minimum competition—that should appeal to President Truman's businesslike conservatism. They steadily resist minimum regulations even from the services—that a small group of companies be selected in the Air Force and Navy's great supplies and as often generated a profit. Program, the manufacturers contend, comes through competition.

MEETING GROUND—On one point the aircraft industry, in the light of its record, will risk common cause with the air transport industry. The government should undertake the development of new transports.

While splitting on several issues, all the aircraft representatives stressed the need of federal backing for new transport plane development. The manufacturers fervently support that view.

Development of that country of jet transports in particular is extremely unlikely unless the Army and Navy do put up the initial financing. One manufacturer has a design already to go to the shop. The finished article would cost about \$20,000,000. That is too great a burden for either manufacturer or airline.

SHADOW OF PAST—Chairman Finletter's stock question regarding adequacy of existing act, and the non-universal answer that the act is all right but that its administration is poor, is misleading observers that means for quick correction of that situation exists.

CAA and CAB were created within the framework of presidential executive order. President Truman has similar authority to reconstitute the past organization, including an independent air safety board.

If the need for such action seemed pressing and it were to be undertaken, it would be only an interim measure until Congress acts. Congress has veto power over an executive reorganization in any event. It has pending its own plan for reorganizing the governmental aviation structure and would not wish such white house action.

But insistence grows for an overhauling of CAA, CAB, and, in general, for an independent air safety board.



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NEWS DIGEST

BOMBER

Stinger CG-10. Robert L. Lee, the manager of controlled transports for the Boeing Co., has designed a small-scale aircraft design for the Atlantic short-haul CG-10. It can carry a payload equivalent to 10,000 lb. of freight in a destination and return a certain amount with the housing dimensions, automatically opening hatch doors and allowing loads of up to 10,000 lb. to be loaded.

Stephen C. Lee, AFM veteran and founder of the AFM division of defense firm, was a special director of public relations for Department of Air Force under secretary Sherman, Brig. Gen. Joseph O'Donnell, who was director of information for the U.S. Air Force.

Sherman, Atlanta, after demonstrating his Stinger 20-20 at points along its route, has decided to market it, and the units are going to be sold by Gander Corporation, which has four offices in two of the 49 passenger stations or airports he found.

FINANCIAL

CGA has approved Western Air Lines application for a \$4,000,000 loan from the Reconstruction Finance Corporation.

All kinds of guarantees have been checked out by the New York meeting of all air traffic managers presidents, both AFM and West Coast.

Director of Jack & Dunn Precision Inc., the Clarendon Hills aircraft repair plant, has been elected president of a potential merger group, DDC-1, to hold a board of record on Sept. 21.

Brussels Airlines, Belgium reports net loss of \$164,347 for the second quarter, bringing total net losses to \$208,077 since year began, whereas at May 31, 1948 had been surplus of \$10,000. Total earnings for the first half was \$16,012.

FOREIGN

Pan American International Airlines last week is listed to begin scheduled DC-4 flights between Chile and Latin America, via Venezuela and New York via Panama City and Lima.

London, Anna Skinner, actress, legend of England, who plays a major, international role in South Africa's circus career. Her new group plans world-wide operations with bases in Britain, South Africa and Australia and plans from Pacific operations starting in October.

BOAC has scheduled a quick service between Montreal and London using mid Atlantic reworking of transoceanic Convair Liner. Interim — Ann Luttemann will transfer 2,000 gallons of fuel to and from

British Motorist Air Bus expert sources early next month to start service to Britain. British Cessna will be used initially.

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NEW SECRETARY OF THE AIR FORCE

Mr. Stuart Symington, ILR former Assistant Secretary of War for the Air, is shown taking the oath of office as the Secretary of the Air Force. He succeeds General Hoyt S. Vandenberg, who has been succeeded by General Hoyt S. Vandenberg, Secretary of War, James M. Forrestal, Secretary of National Defense and John Sullivan, Secretary of the Navy. (DAPM photo)

United States Air Force Emerges From New Defense Organization

Airmen get control of research, procurement, strategic missiles and own anti-aircraft in initial split with Army.

The United States Air Force emerged from a 30-year incubation last week as the War Department assumed full war-time responsibilities for the Air Force. The program that saw the AFM Division established at the Secretary of National Defense, and Mr. Stuart Symington, take the oath as the new Secretary of the Department of the Air Force.

Presently, authority is not enforced by President Truman by memo from the White House to all the now semi-autonomous research armies in motion. Although the USAF has officially severed the umbilical that bound it to the War Department, new Department of the Army, senior status still holds it loosely to the old relationship during a two year interim period set by existing law and complete legal separation policies.

► **USAF Strength**—Initially the USAF will show up as a force of 10,000 officers and men, 176,000 air force employees and about 14,000 planes, most of those having already USAF uniforms through

use to the USAF control of bombers over which it exerted almost complete authority as far back as 1941. The old War Department regime had treated the Department of the Army, which functions like the Air Force, much the way an organization can be run over by a less capable person. But now, the USAF budget which will continue to grow from AFM funds will receive a much more formal approach, a far compliment below the very close plane liaison effective Post war president AFM force budget will come in 1949.

Among the 200 specific agreements on the 200 reached between the Army and Air Force the following are noted significant:

- **Plan and Policy**—The Air Force assumes complete control of its own planning and policy recommendations. It will also assume administrative supervision of certain AFM programs and commissions on Labor issues including execution of contracts and procurement.

- **Procurement**—The AFM will assume responsibility for its own procurement program. An Air Force will assume responsibility for contract administration on contracts that do not fall under Contract Settlement Act of 1944. The latter will continue to part Army Air Force responsibility. An AFM negotiating team will be transferred to the Air Materiel Agency (AMA). AFM will assume responsibility of the AFM contracts and responsible for contract funds. A future date to be determined by the Secretary of the Air Force and the Secretary of the Army.

- **Research**—Air Force will be responsible for its own research and development program including program responsibility for guided missiles work for both Army and Air Force. As previously prescribed, increased reliance will be placed on a broad-based committee of the old War Department research council to review AFM recommendations on Army and Navy research groups and vice versa.

- **Industrial Mobilization**—All firms will do their own industrial mobilization planning in part function of the Materiel Board as it was established by the Secretary of War earlier.

- **Global Mobility**—Air Force will assume control of all strategic long range aerial and surface to air missiles designed for inter area and theater. Army gets short range tactical missiles and surface to air missiles designed for defense of troops or mobile objectives.

ENGINEERING & PRODUCTION



Ryan Sees Profit Possibilities In Lightplane Market Future

Veteran manufacturer celebrates 25th anniversary as head of firm; urges output keyed to demand.

By SCHOLER BANGS

In the face of an indifferent market for personal aircraft, R. M. Ryan Co. is adapting its strategy for maximum production of the Ryan, designed by the consortium of Pastorek T. C. Clark Ryan that has come to world fame in the vintage field.

Today, as he marks his 25th year as president of Ryan, the designer and administrator of safety measures and sponsor of the most successful aircraft accident investigation committee because they best agree the future of personal aviation.

"This business is just starting down one end running in others and also will fall at a point that won't be far off in our choosing. Actually the potential market business is confronted today with a market that is as

offbeat compared with normal as you can imagine," says Pastorek. "Those who are in the market with sufficient capital and are prepared and good prospects for success have been able to out of their own learned from years I expect that the personal aircraft still will not make big business, and if they are willing to drop down to provide between the aircraft and automobile industry in traveling products will increase."

There does not seem to me that there even with a somewhat stabilized market the door is open for all with a good prospect to do well on a power boat."

"In 1949 we produced the Ryan ST, our Sports Trainer.

He is definite on that score. He believes

that literally hundreds of personal aircraft designs, many already in experimental flight, will enter the air as the market. He is convinced that for the next few years, at least, market and profits still belong to the competitive bunch of manufacturers who already have established these products and have developed them into outlets.

► **Sharp Warning.**—Thus, he says, is why: "To those who can survive in the so-called status quo the aircraft industry is going to prove disastrous. It is time to think about the future of personal aircraft companies." Manufacturers who think that would like to build airplanes and proceed to do so by buying someone with professional ability in aviation a factory by building planes in it as a past they can't afford.

► **Criti Foothold.**—"The end of existing the business has become almost prohibitive from the standpoint of financing capital to the underworld of a very strong that does not have a tested market."

I would say that it is going to cost any newcomer who wants to try to break through at least a \$100,000 initial investment in his first set and develop a once personal airplane that can compete with existing models on the market. And that much money does not purchase a history and goes and machinery. It will require two years of engineering and development, plant tooling, and sales promotion before he will be in production."

To too many to be under the illusion that rapid development of an airplane is possible on a power boat."

"In 1949 we produced the Ryan ST, our Sports Trainer.

In 1952, T. Claude Ryan, a re-entrepreneur, bought back and restored the aviation business. The company he founded shortly thereafter has an aircraft design, manufacturing, testing, repair and overhaul outfit, training and maintenance.

Although the present entrepreneur is not the original firm, Ryan is one of the few men who have survived and continuously handled his own aircraft company for a number of years (other, Donald Douglas, Glenn L. Martin). Today, he continues to be a leader in the aircraft business, in addition, Aviation Week asked Mr. Wynn Cook, correspondent to call Mr. Ryan's views on where we are today and what we likely are going to personal aircraft manufacturing—Ryan's major program at the moment. The accompanying story is the result.

► **That model.**—One of the most popular ever developed was completed, the proto type certificated in five months by two engineers and one draftsman, who left the drafting bench to help in the final assembly once that engineering was completed. The cost was \$25,000.

► **Prototype development of an ST.**—There were only three prototypes in 1947 spent at around \$75,000.

► **Development Costs.**—"Today if we had to develop a plane as comparatively simple as the Sports Trainer we would not be able to handle initial development costs below \$100,000. A plane of the ST2 type would cost at least \$150,000. And there are no savings to be had."

With prototype costs multiplied ten times over what they were before the war, it is becoming necessary that a manufacturer plan the most economical production program possible with a view of reducing total costs to two years of possible and realistic profits here.

The only way to minimize production costs, over a long period, is to spend a share of a lot of money at the very start in efficient production tooling and labor savings machinery.

► **Wait a moment.**—It can never enough money to do this, to go all the way to setting up for production, he is going to be looking for outside funds.

► **Industry Hazard.**—"The modern personal aircraft manufacturer, presents a project that should be encouraging to those already established."

"They'll not have to worry too much, for the time being, about 'new competition.'

"It is true, however, that the industry is endowed with certain bands of emotion."

"Probably the most recent is that of raising accountably what our production volume should be."

"Even more screen would be a general economic theory. Like it or not we have to realize in admissions that the personal aircraft market is very much at the end of the road of expansion. As long as the market generally remains at the same level we may expect to sell airplanes on a market considerably better than we had before the war. In a general economic theory, however, many of today's good prospects would consider the personal airplane as a non-essential."

► **Designs No Worry.**—"The very last of concern, in my opinion, is the 'revolutionizing' stage that is going to dominate all existing airplanes. The transition is the best example. It might be mentioned to be extremely the ideal personal aircraft for tomorrow. But the problem of perfecting it to make it a safe and useful instrument is the kind of a 'competition' never, and of course, in the history of engineering, could be such that it cannot be overcome and again after the personal airplane probably for some time to come, probably many years."

"Actually, this is on me for his warning, but his writing down in order the cost of our prospects

AVIATION WEEK, September 29, 1947



High altitude operators, Maj. Gen. Malcolm C. Gross, Air Force chief of staff, W. E. Reid, Boeing's president, engineering chief, Edward C. S. Nicholson, assistant chief of Navy Bureau of Engineering; and W. H. Leopold II, president director of TWA, take time out between sessions of the three day Boeing high altitude flight symposium.

High Altitude Flight Problems Diminishing

Delegates at Boeing meet see solution in flight for all it is for differences

Among these day symposia sponsored by Boeing Aircraft Co. added a note of life to discussion of problems facing the industry in high altitude flight. Companies offered and exchanged opinions that all types problems have been conquered and lesser problems can be solved.

Delegates from foreign countries, including Australia, Canada, England, Holland, Argentina and Japan, accepted the invitation to discuss aeronautical problems which only serve to emphasize the design, increase the operating cost and add life to in nothing to the value of the airplane.

► **Oxygen Systems.**—Only contractors, at the meeting resolved over the question of the need for safety oxygen systems, gen and auxiliary. D. W. Leopold II, president of the ANP Research and Advisory Board, indicated designs for TWA's and commercial aircrafts for Northwest Airlines standardized.

As he reflected before that was evident:

"It is true, there is a basic necessity, hanging over the two-plane personal airplane market."

"That is not true in the manufacturing of the airplane, plane. The production of these planes in the \$4,000-\$9,000 class, was shown following the war, manufacturing has increased of airplanes per year."

"By now we have reason to feel that while it is necessary to think of producing such a plane at the rate of 25 a day, in

the subject by availing that Northwest's shareholders will include an auxiliary oxygen system that can provide oxygen to every passenger seat in the plane."

Col. A. D. Tuck, chief technical director for United Air Lines, commented that Northwest would only use emergency oxygen tanks for passengers with a reinforced seat belt for the protection and oxygen bottle for passengers who might need them.

Considering that M. F. Vassil, research engineer responsible for Boeing's flight test program to supply oxygen to passengers in case of fire in point of "survived" secondary safety or emergency feature which only serves to emphasize the design, increase the operating cost and add life to in nothing to the value of the airplane."

► **Passenger Safety.**—Passenger seats which would enable each to fly 15,000 feet higher than the present maximum, was discussed by Dr. John D. Alcock, head of the aeronautics engineering department at the University of Massachusetts.

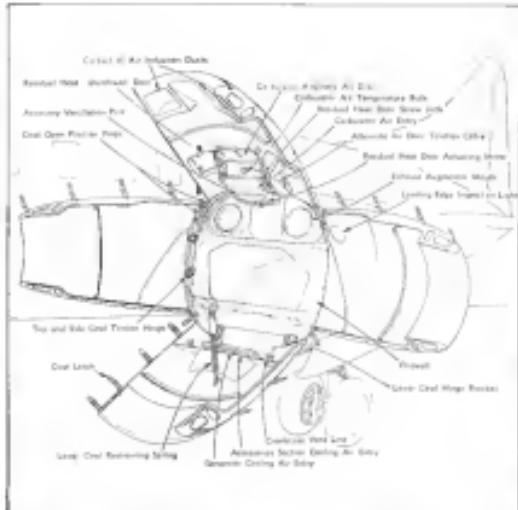
Refined to more comfortable a year or two ago, the model will hold firm for the introduction of several studies—the most popular among them being the interested research institution's interests of a profitable market volume."

► **Engines.**—Motors. "Having a survival oxygen system, there should be little trouble in holding the passenger market for several planes, and expanding it gradually."

The reason for this is that the airplane never today gets more airplane for his money than ever before."



NEW WAY Each panel of cowling can be opened individually, bottom and side segments spread out 60 deg., top 75 deg. Engine is exposed from prop to firewall, to which cowl panels are attached.



HOW IT'S DONE: Uppos and lower panels carry new secondary ventilation. Rollers strip between second and third tracks to only contact with engine baffle and minimum vibration.

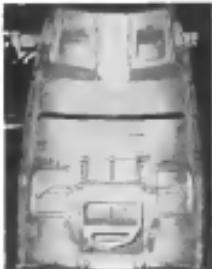


OLD WAY: Old and separate action by sections required to get compatibility comparable to managed code. Even then, flags are happy.



RESULT Smooth, dense lines of new muscle are apparent. Linkages between muscle segments are fluid. Conventional lines are absent.

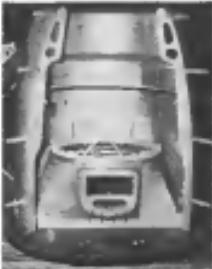
Modern Cowl Design Saves Operators Time and Expense



TOP PANEL: Design hole to operate solid wall heat shield (3. for r = 40 bottom) has been replaced with counterbore (see sketch)



COWL BOTTOM Built as a fixed scoop to aid intake. Air is picked up by boundary layer that is close upper surface



WIP PANEL REMOVED Shows no
access and accessory shroud. Rastangle &
carburetor air inlet, accessory outlet below.

How to offer value customers value

in response and time to make possible greater utilization of the airplane. Consolidated Vultee Aircraft Corp. presents in the design of the "Interceptor" series of the Convair Line an outstanding maintenance and service aid.

While various forms of the nacelle have been used before, the Chinese version is unique in all its design offering quick and complete engine accessibility. A longitudinal, full-carbon structure, it holds vibration to a minimum. During the low pressure section maintenance is built-in for quick shift, so that what was said is repeated even the shorting is out of the field of view of the machine.

- In addition, each panel is mounted on rubber bushings at front/rear hinge points, and duration of these rubber mounts (except those for the lower panel) allows panel movement during closure.

Power plant wide open for ground servicing without removing cover. Minimum vibration, built-in ducts featured.

and as presented by a standard road area half-size plate.

Because bottom panel is the one most frequently removed, loops tie that section and fitted with quickly removable flat-head lever pins secured with safety pins. Office

With pouch open, all bungs except those on top section are removed, and these are assembled through slits in a shelf between

Cost is fabricated by Baku Assess Co.,
1-1, Naka, Saitama

An additional swallowtail similar to that of the *Cassia* Linnæi is standard on Lockheed's Cessna 172. Its wing leading edge consists of four panels but only the top and bottom segments are hinged at the centerline. Both panels are hinged to the top section and may be opened upward to have positive position with top panel closed, or they may be moving up with top panel and closed.



Fig. 1. Instrument based test station.



Fig. 3. Schematic diagram of recording system.

New Methods Developed For Evaluating Rocket Motors

Outlined are production tests used for solid and liquid propellant charges, and instrumentation employed in these investigations.

Guidelines for testing solid motor and composite propellant charges developed for auxiliary or main configurations have been used successfully to keep abreast of current development. During World War II rocket development gave propellants efficiency to change it from the use of combustion experiments to a scientific and dependable power source.

At requirements, measurable expandable propellant specifications covering operating temperature, range, higher polymerization, longer duration, lighter weights and lower fuel consumption were necessarily expanded from main production to development of improved units, new propellants, and new systems. After test requirements increased to include other measurements of performance criteria, testing techniques and control mechanisms which have been developed at the Engineering Group of the Research Division in more association with the field.

Production Testing—With solid motors, velocities requiring measurement are per-

formed by means of fast and type of motor used. Production test levels are determined by mechanical performance for meeting operational requirements concerning flame load, heat impulse, propellant consumption and ignition lag, generally require measurement of comparatively few variables. In development testing a new unit, or a new propellant formulation, design must have additional data—heat transfer, pressure, specific char acceleration, resonance, vibration accelerations etc.—to establish basic for durability and design. Type of motor, whether it utilizes a liquid or solid propellant, yields definite variables to be measured.

Solid Propellant Units. Standard JATO unit is produced in batches, a batch consisting of total number and total mass of all propellants. Testing techniques are established for each type of batch. The test fixture provides a motor mount which permits the unit to be mounted and fired at ambient temperature (60 deg F), and at 10 deg F

and below guaranteed levels (140 and -13 F). Data items are thrust, duration, ignition lag, chamber pressure and weight of propellant burned. Unit fired at 10 deg F establishes results use for batch to bring that length within specified range. Unit fired at -10 deg and 140 deg F with established use sample values obtainable of batch to operate within minimum and maximum thrust levels.

Use of standard propellant motor or

motor having a known history to record this data, and use of standard accelerators is recommended for use. For example, use of a long length test fixture, Fig. 1 shows unit used and control panel used.

Propellant burned is determined by weight of unit before and after firing. That type is used between each run to eliminate variation. Overall accuracy of system is well within ±5% range up to the rate of testing. Section provides incomplete records of long with continuous data reduction.

Liquid Propellant Units. Production test of liquid propellant units is to establish acceptable performance of unit itself and additional thermal units. To achieve these two types of tests, basic methods are to hydrostatically fire test unit and heat it and cool it a few deg. If production test is of this type and all guided for preparation of test unit, it is expected to have no problems in actual test.

If a complete liquid unit, including tank, is tested weight of propellant required to



Fig. 2. Prototype recording equipment.

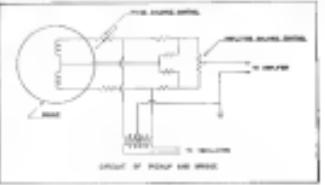


Fig. 4. Circuit of piping and bridge.

is measured. If liquid motor is tested, weight of propellant is determined by first and last pressures of test.

On the assumption that a liquid motor produced or questionable in result of previous developmental research data can be readily obtained on same type of equipment as shown for solid JATO units.

Firing Instrumentation. In early rocket development photographic was made, at regular intervals of a panel which mounted hydraulic gages and other instruments. This was satisfactory for recording moments and rapid sequence of events needed to evaluate starting or stopping and/or. At present, however, this method has altered the current methods. A photograph of the motor assembly, including thermal coating, is often recorded, either by a photographic and television camera or a stereophotograph.

Timing or start times can be measured immediately after a firing test, but these have low frequency response and high decaying power requirements.

Carbohydrate photography has extremely high frequency response, but is not well adapted to multiple recording.

Cathode-ray oscilloscopes have moderately high frequency response, and have received a large number of favorable stimulations.

Another important advantage is that many variables can be recorded on photographs for directly without amplification.

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Another important advantage is that many variables can be recorded on photographs for directly without amplification.

Variables. To check short circuit on a rocket motor, it is essential to record several times all mentioned typical variables.

With liquid propellant motor, it is desirable to record three variables with a time resolution of at least 1/200 sec—motor unit, combustion chamber pressure, propellant injection pressure, pressure drop or constant unit pressure or feed system, chamber wall temperature, propellant injection temperature, temperature rise or constant combustion of propellant tubes mass rate, rate of operation of combustion and radius of rotating propellant, including probe calibration, and signal amplitude.

Operation of rocket motor and relay are reflected on megaphone record by connecting each initiating cell to a galvanometer through high resistance. Relay controlling circuit may be connected to some galvanometer through varied resistor. Each operation may then be shown by use of step or intelligible. A one reading voltage may also be used depending upon type of megaphone used.

Data are recorded on multichannel photomultiplier tube megaphone recording time of units simulated and can record wave of 14 galvanometers. Other equipment includes oxygen available, current multiplier, power supplies, vibration pickup, pressure pickup, and accelerometers.

Fig. 2 shows arrangement of electronic equipment and liquid propellant tank.

Electronically controlled piping and logic operations at 10 cps in Fig. 4. Two or four channels of piping flows in two arms of bridge. Input velocities and phase are recorded in the two channels.

Oscillograph Application. When using pressure pickup for recording pressure transients, it is converted in form of pressure and mixed with short fluid line to prevent distortion of transients. Differential pressure pickup can be measured with one pickup, skin pressure, pressure change, piping one pressure agencies, or the change of the second pressure so that the transient is proportional to differential pressure.

It has been found convenient to measure the pressure of the propellant tank and propellant pickup in a hydrodynamic system. A standard pickup is used to measure the absolute pressure. Fig. 3 shows experimental setup used in publications cited for test. In this system there is slight mass, instead of dead-borne, of linkage of fluid and propellant expansion of less, i.e., the conversion of stored elastic energy of mechanism into mechanical energy of the propellant tank.

Carbohydrate photography has extremely high frequency response, but is not well adapted to multiple recording.

Cathode-ray oscilloscopes have moderately high frequency response, and have received a large number of favorable stimulations.

Another important advantage is that many variables can be recorded on photographs for directly without amplification.

Another important advantage is that many variables can be recorded on photographs for directly without amplification.

Recording Power. Possible error in data obtained with megaphone recording is less described or within ±2%. These are errors, an uncontrolled or relatively simple way to measure, to increase input voltage of pickup. A newer system employing higher output pickup and a discriminator which discriminates noise for application prevents accuracy requirement to ±1%.

Instrumentation will continue to be developed to the end use of data. No single system of testing facilities and techniques for rocket development will suffice in requirements of this rapidly expanding field. Each will have to be modified depending upon type of instrumentation used.



Fig. 4. Experimental setup on jettisoning test stand.



Separated from craft, the freight container—equipped with wheels and tow bar—becomes a cargo trailer to an ultimate destination.

Miles' New M.68 Has Roadable Cargo-Hold

Designed for quick turnaround facility, British light freighter has fuselage readily detachable for use as trailer.

The work-proven feature of results made possible by the Miles M.68 has been copied and successfully achieved in the new Miles M.68, which recently made its first flight. Its unique ground handling and in-speed dispensation of airspeed, the British design experts addressed safety with the basic configuration of an all-podem—the container-carrying fuselage Miles Avro.

► **Pusher-Trailer Design.** Essentially, the M.68 is an all-new aircraft in a class for a detachable container 10 ft long by 41 ft. 8 in. square, accommodating a 1,600 lb payload for a still air range of 400 mi at a cruising speed of 180 mph. Location of the nose in between cabin and engine allows all fuselage features to be further accommodated by varying the nose's dimensions and in total accommodation to meet specific requirements in various radiations. In addition to conventional cargo barge, adoption is made for transportation of an

engaged propeller, and the operational nose such as long distance and fast transport. Features—the fuselage, wing, empennage which fit modularly, the freight container as documented from the plane, and tail fin base is used for use as a trailer for transportation in ultimate destination. For quick turnaround facility, the craft may immediately be fitted with an other loaded container or may fly without cargo compensation by attaching one having already been fitted.

► **Operational Advantages.** Picking up the value of air barge over railcar transportation, the design is intended to cover difficult terrain in providing protection against adverse influences of special terrain and clear removal of temperature and humidity conditions.

Thus with the detachable freight compartment controls need be handled and load could only move during the overall handling period of wings to ultimate destination.

Wings in a quicks made by raising the

canopy over a short while before attach aircraft to craft. Control of gravity check is made by adjusting the balance of the passenger no. 4 wheels.

The principle is to change craft with raising an transport position—sliding in snap track for carrying on craft, loading into craft, and checking for C G position, then more handling at destination airport.

Detachable nose of the M.68 operational facility is to step up serial staged transport. Expected by the manufacturer is a city-to-city (as distinguished from airport transport) speed of about 300 mph.

► **Design Details.** Craft has capacity of 10,000 cu ft, offering a maximum range of 1,000 mi. Weight gross is 16,000 lb., weight 9,600 lb. Max gear free tires wheels.

Power plant are four 100-hp Blackburn Cirrus Major. Number of seats is approximately as long with the British belief of using more engines of lower power rather than fewer engines of greater power.



The nose of Miles M.68 shown detachable freightfield and worked between cabin structure and special aft landing.



Aircraft held in detached, air barge is placed behind cabin, and craft is ready for air freight flight.

AVIATION SALES & SERVICE

Cross Country Stressed in Novel Experimental Flight Course

Success of curriculum test may mean sweeping changes in private pilot instruction leading to plane sales revival.

By ALEXANDER M. SURELLY

A significant experimental flight training program opening this month at Ohio City state, Allentown, Ohio, will be closely watched by aviation educators throughout the country, as a test of new liberal ideas in teaching cross-country flying and employing the ability of the engine along with the ABCs of flight.

Developed in cooperation with third engine CAA personnel, the flight training project will teach 150 students under a new curriculum, for sophomore and 120 others who will take standard private pilot flight examinations, and as advanced, will make a short triangular cross country flight to be checked by flight examiner stationed at all three airports who will observe standard time and proficiency in landing and takeoff.

► **New Curriculum.** The new curriculum is aimed at eventual elimination of such flight training practices as simulated forced landing, pilot spins, spins, and personal spin landings, and utilizing the lone conservator as additional cross country training and stage field techniques. It has been set up to reply to a resolution voted at the CAA-management clinic held in Chicago last spring calling for such an experimental course. (Aviation News, March 31.)

The new plan provides for approximately 40 hours of instruction, divided into flight period assignments. Flight instructor's responsibilities include student and runway of objectives.

► **Improved Flying.** While the new teaching method is aimed primarily at improving cross country flying skills of the student, it is predicted that the course will at the same time improve the student's air technique and demonstrate that he is more capable than he would be under the old-style and dogmatic routine of "shooting ahead of his plane."

It is urged that the student learn static, spin, moment, coordination and other "air technique" flying as extremely important and necessary for safety, but as merely secondary to sound cross country, and that the student leads himself in transportation, putting it "on a level with safe automobile operation."

In the first six-hour flight period the

the experimental course which is regarded as a kind of compromise between the solo pilot and complete utilization of flight mechanics in simplified forced landing, pilot spins, spins, and personal spin landings and the more conservative group which insists that all this must be learned in the flight curriculum.

The experimental course if it works out successfully may accelerate the flight training procedure now in use at flight schools throughout the country and vastly shorten present plane sales.

It is pointed out that the trend in flight instruction under the present civilian pilot training program, and now in the pilot's CAA training courses, has been and now can never be in the use of automation at the home airport except for required engine runs and flights. The new system on the two airports involved follows the general principles of the CAA curriculum as applied to civilian flying. Pilots and flight instructors will be given permission to use other storage fields making landings at the storage fields, and doing so with their own consent. Both sets and both provide aid for similar cross country flights. Both sets and flight instructors are to use the same fields, fields with paved runways, concrete fields, and teach the student how and where to turn, how to approach a gas jet, and make practical suggestions about how to overcome the many problems difficulties of personal plane travel.



ATTENTION-GETTER

Everyone seems to pay dividends, like the odd one of this superb B-17 Art Lucy, just across town of Milwaukee, Wis., near Foxfield, bought it and had it restored above the purple because, he says, "he always has been a great admirer of Boeing and all planes." It also attracts dozens of customers who, while their cars are being serviced, sit with through the plane via ramp. Lucy says that when he has raised his purchase price, he will not take the plane and turn the entire cost to the state at a minimum. On the plane is mounted a plaque that reads: "Like E-17" is dedicated to the men and women of the U.S. Armed Forces who served so valiantly during World War II.

YINGLING
AIRCRAFT INC.
Specialized Cessna Service
for the Private Pilot

The Cessna 180 is shown in flight above, and on the ground at a repair station below. Both aircraft are factory-serviced by Yingling Aircraft Inc., Wichita, after having been brought in for major engine or airframe overhauls.

Yingling Aircraft Inc., Wichita, offers factory-supplied replacement parts and factory-built propellers at its major plane repair station. Above: An interrupted takeoff on a road between two trees, dinged the wings of this plane, being towed into the repair station. Other factors are used to rebuild damaged aircraft.

Wichita Repair Base Uses Factory Methods

Specifying or repairing small aircraft and using, whenever possible, factory-issued service methods to do the work, Yingling Aircraft Inc., at Wichita, is operating a repair, service and recovering base which has come out in a model of its type in the industry.

Lester W. Venderly, service manager says he and repair specialist who directs the operations, says his crews can put a repair and service job behind him in less than one week.

Yingling has concentrated on Cessna planes, for which it has the Wichita distribution rights and is located just 1½ miles across the airport from the Cessna Assembly plant. The price the operator will pay in repair charges, however, is not so important, as the placement of parts needed is really sensible, and the operator has purchased regular gos from the Cessna company, so that it can give several equalities of factory rebuilding or damaged Cessnas.

With more than 8,000 sq ft of working floor space for the repair base, the company can keep half a dozen or more planes repaired at any time. Plastered items made to fit various parts during leading edges, ribs, panels, engine, etc., can usually be replaced cheaper than they can be repaired and in less time. Venderly expects the operator makes an effort to tell not to repair any part if it's already damaged. The operator is prepared to go as far as \$100 or \$200 extra for a Cessna to pickup a wounded plane with a Yingling repair, but also is recovering work brought in from many parts of the country.

Two types of light planes which Yingling has repaired recently:

• The plane of a Colorado pilot, who had it in an open field and had to run out

Crash. The pilot reported about 25-30 min later and part of 545 is charged, with the Cessna fuselage passing to the controllers. After several leaders early 1946 Cessna had been sold as it was found that the components were not sufficiently original, and a number of the planes with the original parts are still flying.

Luscombe Cuts Price \$200 on Silvairne Plane

Trumbull Aeroplane Corp. announced today of a \$200 cut in the list price of the popular "Silvairne Standard" model at the first lightplane manufacturer to set its production at a price level from the previous year. The reduction in the price of the all-metal aircraft to \$1,795 comes at the factory near Dallas, Texas.

The price reduction is a tangible result of simplified structure. Previous Work Sept. 11 and accompanying savings in casting and production costs. E. H. F. Riles, Luscombe president, says: "The reduction is being made to enable flying school operators to reply their flight lines with new and modern equipment before the advent of winter when the rate of operation will again be high."

New York Council Meets Oct. 6

New York State Aviation Council convened meeting in Rochester, N. Y., Oct. 6 and 7 will be patterned on the National Aviation Council held in Oklahoma City. President George W. Rausser and a strong delegation of members on the program will be made as well as arrangements for it have been completed.



New Twist for Hiller

Shown in flight is a small tilt helicopter which Stanley Hiller, Jr., has engineered. The basic design of production model now under development by the United Autogiro Co. at Fullerton, Calif. Most interesting aspect of the design is that it is the first helicopter, single and bi-rotor, to have a completely helical main rotor system in two complete



New Cessna Accessory

Cessna Aircraft Co., Wichita, has announced a new standard wheel pants accessory designed for its standard steel spoked landing gear. Consisting of four fixed struts, the pants are designed so they will not shear loose or interfere with the mainstrut mountings and will withstand landings in rough fields and high speeds. Modification cost is \$100. The pants will not interfere with landing gear locks, the wheels, or other standard equipment in the Cessna 120 and 140 two-place planes the wheel pants are priced at \$47.95.

Plan Color Cruise Route

Plan and route of the annual Michigan State Color Cruise, Oct. 9-12, have been announced by Wayne J. Sheldon, air race manager, Michigan Department of aviation, Lansing.

Plane will leave org. at St. Ignace on the morning of Oct. 9 for a long leg to Lake Charlevoix island covering for a fourth hour and 100 miles. This evening, plane will fly to L'Anse, next morning to a long legging camp having left 11 for Land O'Lakes, Wis. and from Menomonie, Wisc.

Air Seeding Deal

Interior Department has outlined its air-seeding program of needed funds, available and wanting. The Bureau of Land Management of the Department has estimated an \$87,500 project for the International Seab. Filter Co., Phoenix, Ariz., for the seeding of 10,000 acres of forested grazing land in central Wyoming and 10,000 acres in eastern Idaho. Internationally, 100 of 51 U.S. states will use the technique, one reason

Students' Air Meet Slated

Students from more than 20 institutions in Washington, Oregon, California and Nevada will participate in a Pacific Coast inter-collegiate air meet at Livermore Naval Air Station Oct. 24. The meet will feature individual events for T-33 and Mil. dog spot landings, level and bank landing, paper cutting, and banner landing. Host will be University of California Flying Club and West Air and Navy clubs will be exhibited.

STATION AVIATION MAPS.—The best and most complete map yet shown by any state in preparing a state aeronautics plan is that which William L. Anderson, Pennsylvania aeronautics director has put together for the Keystone State. Pennsylvania undoubtedly is not alone among the states in its aeronautics, with a total of 200 airports shown on the map. Anderson has used in the base for his map, the aeronautical CAA sectional chart which includes parts of his state, so that the map covers the entire state in sectional chart form. The pilot of the map can see at a glance all of the airports he may need to know as soon as possible from the map, the location and altitude of each and the like. Thus, with 120 airports to the north, he can quickly determine the number of flights he can make in a day, the distance to the nearest airport, and probably will be influenced to take a plane to the state. The Pennsylvania map is the most complete and useful in a pilot. While the present crop of pilots are limited to the sectional charts, our possibilities of truly aeronautic charts of properly and adequately prepared, representing the networks. The more detail on a map, the better chance the inexperienced pilot has at keeping on course and personally a safe map of manageable size, composed from local sources of information, could have more such detail than the sectional.

CLOUD BUSTING.—Billie Meade, Phoenix, Ariz., aviator, uses aerial dusting as a spring item in the aircraft operation picture. "While after war service and training, we are not doing well, he has seen a steady increase in demand for crop dusting and expects it in the most hopeful branch of the aviation operations business."

BRIEFING FOR DEALERS AND DISTRIBUTORS

MILES GEMINI DISTRIBUTORSHIP—Complete with little cost such as roller widths, Miles made the cabin in shade the occupant from a too-bright sun, the twin cargo bay plus Miles Gemini now is demonstrating in the United States open passenger plane designer same fuel for thought, particularly in single engine planes such as Bock 800, Super 800, and adaptability to small fields. As a demonstration at Washington Airport, carrying three passengers including the owner, resulted at slightly over 10 mph indicated, and thus created an enhanced 150 mph at 2,700 rpm.

Equipped with Continental 115 hp engine and "Geminis" interior, the dimensions of the Gemini will fit in round \$14,600-\$15,000 with delivery. The dimensions are same Miles 800 hp engine which adds 10 inches to the overall 30 ft length specified than the Continental 115. The author doesn't think the American export version with the Continental's over-rated engine would offer to 150 mph with a top speed at 150 mph while the American version, considerably, does 160 miles. We have a prepriate agent who will represent and sign contracts with the Miles representative on this point but they cited the use of a propeller, a solid propeller, on the Gemini's internal fittings and painted to the long life of a Miles Blank of similar metal structures which came to Singapore in 1945 before the outbreak of World War II and was extensively during the war with little evidence of deterioration. Other interesting gadgets on the Gemini demonstrate a rising load hard landing to extend the landing gear in a simple manner at a lower, as even the electric actuation should fail, a hand link mechanism with variable probe that keeps applied to whether where the rubberized pantograph indicates for turn or both wheels pressure is not applied. Another trademark gadget installed directly at the aileron, at an angle so they are visible from the pilot's seat.

NEW MERCHANDISING POLICY—One of the sharpest cameras of the selling personnel plane makers, which has been in publication in the article "Personal Plane—Put It on Paper," in the Sept. 15 issue of *Tide Advertising magazine*. "Nothing like a major merchandising of quality merchandise and advertising policies can assist the selling plane maker," the magazine claims. The Tide precept for salesmen calls for additional training of 97 percent of plane sellers, new and outlets different after a better service for dealers and distribution of the used plane market so that dealers can aim to stimulate new plane sales in purchasing decent business atmosphere.

PRATT & WHITNEY DISTRIBUTOR—Appointment of Aircraft Corp., Mobile, Ala., as a Pratt & Whitney aircraft engine distributor for New England, midwest of Union County, Elkhorn, Maryland, Virginia, West Virginia and District of Columbia and as an improved product shop, has been announced. The company has been in existence since 1928 and is a member of the former Middle States Air Bus. Since then, has four 1200-hp, ten-cylinder, range stations and Cessna weather facilities. The shop has medium equipment and machinery with test facilities to test a fair amount of test in factory tests. Sales offices, all former P&W offices are Francis E. Blair, president and treasurer, Joseph V. Thompson, executive vice-president, Thomas Radford, Jr., vice-president spokesman, Earl D. Martin, vice-president sales, and John S. Colgate, secretary.

STATE AVIATION MAPS.—The best and most complete map yet shown by any state in preparing a state aeronautics plan is that which William L. Anderson, Pennsylvania aeronautics director has put together for the Keystone State. Pennsylvania undoubtedly is not alone among the states in its aeronautics, with a total of 200 airports shown on the map. Anderson has used in the base for his map, the aeronautical CAA sectional chart which includes parts of his state, so that the map covers the entire state in sectional chart form. The pilot of the map can see at a glance all of the airports he may need to know as soon as possible from the map, the location and altitude of each and the like. Thus, with 120 airports to the north, he can quickly determine the number of flights he can make in a day, the distance to the nearest airport, and probably will be influenced to take a plane to the state. The Pennsylvania map is the most complete and useful in a pilot. While the present crop of pilots are limited to the sectional charts, our possibilities of truly aeronautic charts of properly and adequately prepared, representing the networks. The more detail on a map, the better chance the inexperienced pilot has at keeping on course and personally a safe map of manageable size, composed from local sources of information, could have more such detail than the sectional.

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—ALEXANDER MUSKILL

Some short settings for airline operators, charter companies, and VIPs

Presenting the SEALAND...



You've only got to ask

The Sealand, new 5½-tonner monoplane, is now causing all Black's passengers to sit. It's worthy of your attention whenever you are operating and reducing your aviation expenses. For the Sealand is the most adaptable, conveniently used aircraft of its type ever designed. It's fast, the thing for charter companies and Budget lines. It is readily converted into a freighter, an ambulance, a mobile observation, or—equipped as an office—a business men's transport. And it's as light and easy to handle on land as on water.

Getting down to it

Let's have a few estimated performance figures. The Sealand, at maximum economic cruising power—slightly 5,600 ft—does 170 m.p.h. In stages, at 147 m.p.h., it 375 statute miles with full tanks (26 gallons) and 500 lbs. of freight. With less fuel (16 gallons) it will carry 1,200 lbs. of payload, which is roughly equivalent to five passengers and luggage, a range of 60 miles.



Passenger soft seats for Sealand's extremely spacious interior, available leather seats on request and with reclining positions.

Take-off distance is only 505 yds. (in all terrain) from rotary 370 yds. from land. Landing speed is 60 m.p.h., and service ceiling is 10,000 ft.



The Sealand is rapidly presented with two types of D.M. flying job require. The cost is steady and efficiently kept set, and offers an inexpensive cash field of work.

Where breeding sounds

Of course, price cuts have been taken to ensure that all Air Registration Board safety requirements have been met, and that aerobatics are uncomplicated one engine flight. Why "econom?" Because for forty years Stoen have been designing and building their famous family of flying boats. The Sealand does has a proud history. We suggest that, if you would care to explore this new amphibian, you write for complete details and tell us your requirements.



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AIR TRANSPORT



COHU AT AIR POLICY HEARING

Testifying during the first week-long hearing by the President's Air Policy Commission on Monday, TWA President Louis T. Cohn, left, agreed with other top industry executives that the government should undertake the cost of developing new transports planes as an investment in national defense. Questioning Cohn were George E. Baker, professor of transportation at Harvard Graduate School of Business Administration, and former CAB member, and Thomas K. Fletcher, right, New York attorney and chairman of the committee. Baker and Fletcher have handled most of the witness preparation for the Economic policy group, which also includes Harry Post II, Post's father, publisher of the Denver Post, and Arthur Whipple, president of Dan and Whipple

industry at a whole worth over \$45,000,000. The does not take into account the further losses suffered by these same companies in 1947.

Following the controversial conflict plan by Senator Patman, the unscrupulous reheight loans and reheight dividends told the commission that no real industry should be being used to finance a cargo tax. Earl Shiek, partner of Shiek Associates, the nation's largest all-cargo carrier, asserted that CAB use of loan reheight loans prepared to carry freight at rates down to 12 cents a mile was being given over \$7 a ton mile to reheight.

• **Tariff Suspensions.** Allard-Shiek and even the 46 reach a four-mile "service" area paid the major haulers in part rebates and rebated no willingness to carry mail at 18 cents a ton mile. He declared that CAB has power to stop an unwise tax war by suspending the reheighted airfares proposed now. "If the Board allows these freight rates to go into effect, I doubt very much if we will be in business six months from now."

Meanwhile, the pot continued to boil among the reheighted carriers on the advisability of phasing Northwest Airlines in buying one-way domestic passenger load 10 percent. (AVIATION WEEK Sept. 27.) T. E. Board, president of Board Aircraft asserted that "passenger load is still an important factor in the development of the industry." He recommended that United be Luis Lanza, TWA's Tatarian, who is also being forced higher passenger fares and mail rate adjustment for the large carriers can be itself solve the present problem without reaching confront power issues.

• **Against Monotrance.** CAB president G. Blackford Johnson told the commission that the industry is selling its problem below cost. He said a ten percent passenger fare increase probably would help all the airlines, pointing out that his company had enjoyed the rate cut in 1945. A reduction in mail rates would not be advisable if the mail were deleted.

TWA president Louis T. Cohn and Eastern Air Lines president A. V. Rogers told the panel a glimmer of the possible fare increases. From, moreover, in Rehabilitation, possible relief will be able to stand on their own feet with normal mail and air mail continuing anything to the country. Under 180 miles between stops, automobile airfares transports lower than plane.

• **Decontrol.** Decontrol-Twysell pointed out that it will take Chicago & Southern, Colgate, Capital, TPCA, TWA and West Air Air Lines four and one-half years to recover nearly to 1946 levels of fares on some routes as paid less than a compensation rate for mail carriage. On the round trip at fiscal 1947, when the

Airlines Urge Speedy Mail Pay Relief, Shelving of Route Cases

Rickenbacker, Cohn, Monroe, Brophy, Patterson, Shiek testify as hearings continue before President's Air Policy Commission.

By CHARLES ADAMS

With a record industry-wide deficit in 1947 rapidly becoming a dismal certainty, the industry here expressed to the President's Air Policy Commission the urgent need for CAB to get down to less loss in bolstering the carrier against further crippling losses this winter.

Suggestions by Air Transport Association president Ernest S. Land and American Airlines head Charles C. R. Smith that a moratorium be placed on further fare increases (AVIATION WEEK Sept. 21) were not well-received commitments by other association members before the commission. But all agreed that setting new and higher rates of some 10 percent compensation is at present most important in the industry and called on CAB to make fast changes. (See "No Safety Net," WIRELESS, Sept. 10.)

• **Concerned.** Decontrol-Twysell pointed out that it will take Chicago & Southern, Colgate, Capital, TPCA, TWA and West Air Air Lines four and one-half years to recover nearly to 1946 levels of fares on some routes as paid less than a compensation rate for mail carriage. On the round trip at fiscal 1947, when the

AVIATION WEEK, September 28, 1947

TRANSPORT

27



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STANDARD FOR INDUSTRY

Slick-PAA Past

The American Airlines and Pan American have teamed up to set up a joint promotional committee which will integrate the former's world-wide routes with the latter's new scheduled domestic services. Both, which share ten parity common carrier rights last month, will also have added incentive to develop cargo business in foreign ports. The two American operators now work with Pan American at New York, Los Angeles, San Francisco and Honolulu.

Negotiating Conference Given CAB Approval

Terms of the agreement setting up the airline negotiating conference to act as bargaining representative for 16 certified carriers participating in the setup have been approved by CAB. At the same time the Board made clear that its action is to may constitute endorsement of industry-wide bargaining or approval of the conference as the proper bargaining representative in any specific negotiations with a labor organization.

The conference is designated as the above representation of such members as are in negotiations, collective bargaining agreements with the pilots, and, upon request, a representative to act on like capacity in dealing with other employee groups. Governing body of the conference is a board of seven members, six of whom may be officers of a not less than two-thirds interest of a member carrier.

Approval of the agreement had been approved by the Air Line Pilots Association and International Association of Machinists and the two unions said the conference would be used by the conference to impose uniform rules or standards for all member employees. The unions also indicated that under the agreement the conference would meet in an organization which is composed of offices of sister and allied companies covering the central or important part of their business.

CAB said the agreement does not require industry-wide or multi-carrier bargaining and pointed out that industry-wide bargaining cannot be imposed by any party to a labor dispute without the consent of all parties involved. The Board also pointed out that one carrier may resign from the conference if it believes its best interests are not being served in the organization.

European Service

Viaje Europa, who will be represented by overnight airmail and cargo services throughout the coming winter for the first time since the war, according to the latest news from the Transport Association

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PROPOSALS (See *How to Insert*)

NEW ADVERTISEMENTS received Friday will appear in the issue dated second Friday following return to subscriber of copy available.

POSITION VACANT

AERONAUTICAL ENGINEERS and **Laboratory Technicians** required for research and development work in aircraft design and construction. Outstanding opportunities exist for those interested in advanced engineering. The position requires a college degree in aeronautical engineering, plus considerable experience in aircraft design and construction. Write to: Director of Personnel, McDonnell Aircraft Company, St. Louis 12, Mo.

POSITIONS WANTED

MAINTENANCE MAN with broad experience in aircraft maintenance. Must have had some experience in aircraft maintenance, including aircraft assembly, disassembly, inspection, repair, and troubleshooting. Must be able to read blueprints and technical drawings. Must be able to speak Spanish fluently. Write to: Director of Personnel, McDonnell Aircraft Company, St. Louis 12, Mo.

AIRPORTS require an administrator qualified to manage and administer airport operations. Must have extensive experience in airport management, including airport planning, construction, operation, and maintenance. Must be able to read blueprints and technical drawings. Must be able to speak Spanish fluently. Write to: Director of Personnel, McDonnell Aircraft Company, St. Louis 12, Mo.

COMMERCIAL PLANE INSPECTOR with 10 years experience in aircraft maintenance and repair. Must have had some experience in aircraft assembly, disassembly, inspection, repair, and troubleshooting. Must be able to read blueprints and technical drawings. Must be able to speak Spanish fluently. Write to: Director of Personnel, McDonnell Aircraft Company, St. Louis 12, Mo.

CONFIDENTIAL PLANE INSPECTOR with 10 years experience in aircraft maintenance and repair. Must have had some experience in aircraft assembly, disassembly, inspection, repair, and troubleshooting. Must be able to read blueprints and technical drawings. Must be able to speak Spanish fluently. Write to: Director of Personnel, McDonnell Aircraft Company, St. Louis 12, Mo.

BOOKS

PRINCIPLES OF METAL WELDING by G. E. Dornbeck and R. L. Johnson. McGraw-Hill Book Company, New York. Technical, practical and scientific aspects of welding processes. Includes chapters on arc, resistance, electron beam, and plasma welding, as well as metal cutting, brazing, diffusion bonding, and solid-state bonding.

FOR SALE

Locomotive Locomotives—Locomotives for sale distributed throughout the country. Diesel-electric, electric, gasoline, steam, etc. Write to: General Sales Manager, Locomotive Division, Baldwin Locomotive Works, Philadelphia, Pa.

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FLIGHT ATTENDANT by Helen A. Davis. 1961 Publishing. A book for flight attendants and passengers. It gives the reader a good understanding of the job of a flight attendant.

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PAN-AMERICAN NAVIGATION SERVICE, Dept. A-3
12221 Verdugo Blvd. • NORTH HOLLYWOOD, CALIF.

Cargo Rate War—Bad Medicine

How can the certificated airlines afford the 12 cents a ton-mile cargo rate that four of them propose to put into effect next month?

Our editorial opinion is that they cannot. We have found no responsible air transport executive who believes they can.

From VJ Day until recently the certificated airlines largely kept their peace on this matter of competition from independent cargo and charter carriers consolidated by or CGTs with surplus equipment. For a time there were hundreds of them. There was every reason, from a dollars and cents standpoint, why the old-line carriers were justified in going into the public press about unfair competition.

But they gauged the public opinion weakly and kept silent. The majority of the independents folded under their own merciless competition. There are few left. But those few have passed their ability to operate with low rates. This has stirred some of the major carriers and they have launched a letter campaign which appears to be designed to eliminate the independents as soon as possible.

Early in July, Shiek Airways—leader of the independent cargo operators—filed a tariff with CAB setting an average air freight rate of 12 cents a ton-mile to be effective Aug. 1. A few weeks later, 19 unaffiliated carriers cut rates 25 percent, effective Aug. 1, so that their charges now range from 14 to 21 cents. Other unaffiliated all cargo lines retaliated with tariffs averaging about 12 cents a ton mile. For a time this appeared to be the heat on which competition between the certificated and unaffiliated lines would be carried on during the foreseeable future.

Now, however, American, United Western and PCA have filed tariffs with the CAB which, effective next month, would go as low as 12 cents, unaffected all the major unaffiliated carriers on shipments below 1,000 pounds.

Earl Shiel, president of Shiek Airways and head of the Independent Airfreight Association, told President Truman's Air Policy Commission that he doubts if any of the independents can last another six months if the new

rate rates filed by the four airlines are allowed to go into effect next month.

This is good, in the opinion of those who feel the long-established airlines should have no competition but their own. Granted, that is decreasing steadily.

But we feel it is not good for the few remaining indepedents, operating without government income, to be throttled.

How can the airlines, which charge an equivalent of 50 cents a ton-mile for passengers, charge 12 cents a ton-mile for freight? The airlines receive from the government from 45 cents to \$3 a ton-mile for mail, which requires no sites or laborious expense. Yet almost all are seeking higher mail rates.

Moreover, one airline, Northwest, has filed to increase its one-way passenger fares 10 percent, and others may follow suit.

If this drastic cut in freight rates will make money for the airlines, then we have no objection. The public will be receiving better service at less cost, and cargo profits would lead to further public savings in fewer mail rates.

But the matter appears to be a rate war on the indepedent airlines, financed to considerable extent by government mail pay which the unaffiliated carriers do not enjoy, and conducted at a time when the Post Office and passengers are being approached for higher rates.

The airlines of this country have no stronger defender than Aviation Week. But it appears to us that a majority of the established industry has made an unfair tactic and unfair cost is strategy in war against competition. The timing could hardly have been worse. The industry needs all of the friends it can summon to its aid.

The result at this point seems almost certain to be a change in attitude not only in public opinion but in government agencies which control the destiny of the industry. Although only four lines have initiated a drastic and seemingly unprofitable campaign against the independents—which they can hardly afford to carry out indefinitely—the whole air transport industry can suffer. This change toward the industry is already apparent in a few places in official Washington. It is ominous.

ROBERT H. WOOD

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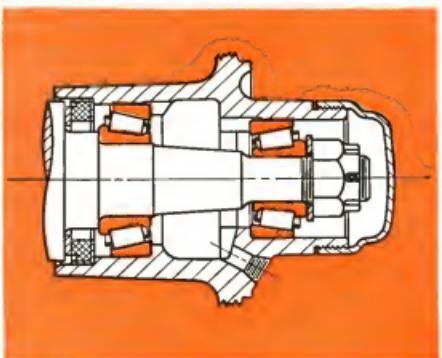
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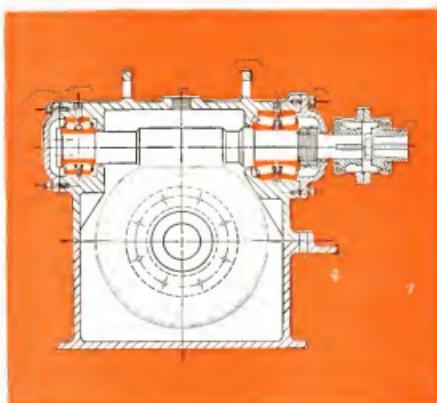
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